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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/873,601	06/12/1997	GARRY P. NOLAN	A-63915/DJB/	2070
24353	7590	03/02/2004	EXAMINER	
BOZICEVIC, FIELD & FRANCIS LLP 200 MIDDLEFIELD RD SUITE 200 MENLO PARK, CA 94025			WESSENDORF, TERESA D	
			ART UNIT	PAPER NUMBER
			1639	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

08/873,601

**Applicant(s)**

NOLAN ET AL.

**Examiner**

T. D. Wessendorf

**Art Unit**

1639

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 58-83 is/are pending in the application.
- 4a) Of the above claim(s) 58-80 and 82 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 81 and 83 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of Group IV claims 81 and 83 and the species, targeting for the scaffold is acknowledged. The traversal is on the ground(s) that that the subject matter of several of the claim groups is completely encompassed by other claim groups. For example, the claims of Group V and II are completely encompassed by the claims of Groups IV and I, respectively. It is further argued that it would require no extra effort on the behalf of the Office to search the subject matter of Groups I and II, or Groups IV and V, since the subject matter of Groups II and V is completely encompassed by Groups I and IV, respectively. Group III claims, for example, are nearly identical to those of Group I or IV, and merely recite a "retroviral vector" instead of a vector.

This is not found persuasive because as applicants recognize the retroviral vector can only be one of the numerous vectors that is encompassed by the claimed generic vectors. Thus, each of the groups involves different searches for different components since different components are additionally added or differentiated from one group to another. For example, Group IV requires a search for two different polypeptide components i.e., enzyme and scaffold that binds or interacts

Art Unit: 1639

with each other. Group V, on the other hand, recites an additional component, different from the two interacting proteins. It recites a bioactive agent precursor that could be a modulator of the two binding peptides. To search for the additional bioactive modulator apart from the two interacting polypeptides will impose undue amount of search. As the U.S. Patent searches are not co-extensive with the scientific literature searches. A prior art reference that anticipates the two peptides would not render obvious an agent that would possibly has an effect on the binding of said peptides.

Applicants further argue the Office has provided no evidence to support the Office position that the inventions have acquired a separate status in the art because of their recognized divergent subject matter.

In reply, applicants' attention is directed to the instant specification. The disclosure teaches the different embodiments of the invention i.e., a separate and distinct embodiments for the agent affecting possibly the interaction of the two proteins from that of the two interacting polypeptides.

Applicants submit that the methods, whether or not they are done with a single precursor agents or retroviral vectors, fall into a single class and digest according to the U.S. Patent and Trademark Office's own patent classification system. The Patent

Office classification system does not separately classify methods of screening using libraries of cells into those that contain precursor agents or retroviral vectors.

In response, the restriction is based on the different groups being of recognized divergent subject matter and not based on the U.S. classification system. This is the more true because the argued digest is not an official subclass.. It has further been restricted because of undue examination, as the U.S. Patent search is not co-extensive with the scientific literature searches.

The requirement is still deemed proper and is therefore made FINAL.

Claims 58-79 and 82 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim.

#### ***Status of Claims***

Claims 58-83 are pending in the application.

Claims 1-57 have been cancelled (not claims 1-58, as stated at page 2 of the instant REMARKS).

Claims 58-80 and 82 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions and species.

Art Unit: 1639

Claims 81 and 83 are under examination.

***Specification***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 81 and 83 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed method produces or reads on naturally occurring enzymatic complex that can be natively present in a cell. Natural cells constantly change that results in the production of different naturally occurring enzymatic complex. Because of the cycle of regeneration that cells undergo or the degeneracy of the nucleic acid codon, hence, it is considered that the instant method that produces said enzymatic complex is a non-statutory subject matter. The process and product it produces are naturally occurring phenomenon and product and would be considered not a new process.

Art Unit: 1639

In view of the above rejection, the previous rejection under this statute no longer applies.

***Claim Rejections - 35 USC § 112, first paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 81 and 83 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide an adequate written description of the claimed method of screening for any type of a library of cells that is altered in any manner by a library of nucleic acid of undefined components. The specification does not describe an enzymatic complex formed from the general method steps. It does not describe the conditions or specific steps by which the different undefined libraries interact to form any desired enzyme complex, more specifically that the first enzyme

Art Unit: 1639

reacts with the first scaffold (not with the second scaffold). The specification at page 4 states that "...the method.....comprises expressing in the cells a library of nucleic acids encoding a library of enzymes; under conditions where the nucleic acids are expressed, and at least some of the enzymes bind to the scaffolds, followed by screening of the host cells for an altered phenotype....." (Emphasis added). It is not apparent from the statement as to the specific reaction of a first enzyme to a first scaffold and the second enzyme to the second scaffold. Furthermore, at page 5, the disclosure states that the same mixtures of enzymes in the absence of spatial orientation may result in the generation of no product or a highly heterogeneous mixture of products that may be difficult to analyze, with interesting products being made in low concentrations. The specification is replete with generalities but the exemplification is nil. This becomes more problematic to a skilled artisan since not a single guidance or direction in specific terms has been described in the specification. See *University of Rochester v. G.D. Searle & Co.*, 68 USPQ2d 1424 (DC WNY 2003).

The rejection of the claims in the last Office action is withdrawn in view of the new rejection, **supra**.

***Claim Rejections - 35 USC § 112, second paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 81 and 83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 81 is incomplete for omitting essential steps. It recites only the single step of screening. The claim provides more limitation for the components with only a single process steps. It is unclear as to the steps that occur prior to the screening step. It is further unclear as to whether screening is for an enzymatic complex or for a plurality of cells.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of

Art Unit: 1639

section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 81 and 83 are rejected under 35 U.S.C. 102(e) as being anticipated by Khosla et al (U.S. 6,391,594).

Khosla discloses at col. 2, line 31 up to col. 3, line 4, a method of screening an enzymatic complex of polyketides with desired binding activities by screening libraries of different modular PKS. The library is obtained by modifying one or more of the regions of a naturally occurring gene or gene cluster encoding an enzymatic activity so as to alter that activity, leaving intact the scaffold portions of the naturally occurring gene. It includes screening a multiplicity of cell colonies comprising a library of colonies wherein each colony of the library contains a different modular PKS. FIG. 2 shows a detailed view of the regions in the first two modules which comprise the first open reading frame encoding DEBS-1. The

Art Unit: 1639

regions that encode enzymatic activities are separated by linker or "scaffold"-encoding regions. These scaffold regions encode amino acid sequences that space the enzymatic activities at the appropriate distances and in the correct order. Thus, these linker regions collectively can be considered to encode a scaffold into which the various activities are placed in a particular order and spatial arrangement. The expression vectors containing nucleotide sequences encoding a variety of PKS systems for the production of different polyketides are then transformed into the appropriate host cells to construct the library. In one approach, a mixture of such vectors is transformed into the selected host cells and the resulting cells plated into individual colonies and selected for successful transformants. Each individual colony will then represent a colony with the ability to produce a particular PKS synthase and ultimately a particular polyketide. A variety of strategies might be devised to obtain a multiplicity of colonies each containing a PKS gene cluster derived from the naturally occurring host gene cluster so that each colony in the library produces a different PKS and ultimately a different polyketide. See particularly the Examples at col. 9, line 45 up to col.18.

Accordingly, the specific process steps of Khosla employing a specific enzyme with a binding capability that alters the phenotype of the enzyme scaffold fully meets the broad claimed single process step of undefined components.

No claim is allowed.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

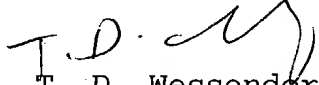
Miceli et al discloses a coiled coil stem loop miniprotein as a presentation scaffold. .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. D. Wessendorf whose telephone number is (571) 272-0812. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1639

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
T. D. Wessendorf  
Primary Examiner  
Art Unit 1639

Tdw

February 21, 2004